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Evaluation of the KOTAKU (Kota Tanpa Kumuh) Program in Babakan Surabaya Subdistrict, Kiaracondong District, Bandung City

Evaluation of the KOTAKU (Kota Tanpa Kumuh) Program in Babakan Surabaya Subdistrict, Kiaracondong District, Bandung City

Fajrin Meilani Azzahra Zain, Aif Nanang Nurrohman, Dandi Maulana Shyfa, Muflih Shidiq
Universitas Islam Bandung, Bandung City, Indonesia

*Corresponding author's email: fajrinzain121@gmail.com

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Abstract. Rapid urbanization has driven the growth of slum areas in urban regions, including Babakan Surabaya Subdistrict, Kiaracondong District, Bandung City, which was prioritized for intervention through the KOTAKU program in Bandung City's RP2KPKP 2017–2021. This study evaluates the program's achievements in Babakan Surabaya, Kiaracondong, which had the largest slum area in 2017. Using a summative evaluation method and a mixed-methods approach, data were collected through a checklist based on slum area criteria from the Ministry of Public Works and Housing's handbook, community perception questionnaires, and literature review. The analysis compared existing conditions with the criteria mentioned above and analyzed community perceptions. Road access, clean water provision, and wastewater management were deemed successful, while drainage and waste management were less successful, and fire protection was unsuccessful. Community satisfaction correlated with the assessment criteria, with high satisfaction for clean water and low satisfaction for fire protection. Slum levels will decrease from moderate to light by 2024. The KOTAKU program requires improvements, especially in fire protection.

Keywords: Evaluation, Slum Settlements, Slum Level, KOTAKU Program

Introduction

Many cities in Indonesia are generally developing rapidly and function as centers of activity, providing comprehensive primary and secondary services. This attracts residents from rural areas seeking a better life and various conveniences, such as the abundance of diverse job opportunities in cities (Kusumawardhani et al., 2016). The centralization of activities in cities can influence the rate of urbanization towards those cities. Urbanization reflects differences in growth and uneven distribution of development facilities between regions, leading to population migration or mobility from rural to urban areas (Sabitha, 2022; Hidayati, 2021). One impact of high urbanization rates is an increase in population and uncontrolled growth and development of urban areas. The growing population naturally leads to an increased need for housing. Population pressure in an area can be indicated by population density (Djami, 2017). Population density describes a situation where an area is considered increasingly dense as the number of people increases within a specific area compared to the size of the inhabited area (Sarwono, 1992), (Mantra, 2007). This density level plays a significant role in determining the quality of life of residents in an area, necessitating improvements in quality to keep pace with population growth (Irham and Putri, 2023).

Based on Undang-Undang No. 1 Tahun 2011 Tentang Perumahan dan Kawasan Permukiman (Law Number 1 of 2011 concerning Housing and Settlements), every person has the right to live a prosperous life, physically and mentally; to have a place to live; and to obtain a good and healthy living environment. These are basic human needs that play a strategic role in shaping the character and personality of the nation, which is expected to build an Indonesian nation with identity, independence, and productivity. However, the increase in the urban population, which is not balanced by the increase in urban land, can lead to the emergence of slums (Safarina and Damayanti, 2023). According to Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 14/PRT/M/2018 Tahun 2018 Tentang Pencegahan dan Peningkatan Kualitas Terhadap Perumahan Kumuh dan Permukiman Kumuh (Regulation of the Minister of Public Works and Public Housing Number 14/PRT/M/2018 of 2018 concerning the Prevention and Quality Improvement of Slums and Informal Settlements), a settlement with irregular buildings, high building density, and substandard building and infrastructure quality is considered a slum. There are two types of slum: squatter and slum. A slum is a legal settlement in an unfit condition, and often the housing does not meet standards. Squatter settlements, on the other hand, are illegal and often occupy prohibited zones for residential development, not complying with land use designations (Amiany, 2017).

In Indonesia, the government formulated the RPJMN 2020–2024, which includes a program targeting the eradication of slum settlements by 2030 under the KOTAKU (Kota Tanpa Kumuh) program by the Ministry of Public Works and Housing (PUPR). This program aims to reduce the extent of slum areas in Indonesia by developing proper housing accompanied by improvements in settlement infrastructure (Peraturan Presiden No 18 Tahun 2020 Tentang Rencana Pembangunan Jangka Menengah Nasional Tahun 2020–2024, 2020). The RP2KPKP (Rencana Pencegahan Dan Peningkatan Kualitas Permukiman Kumuh Perkotaan) is a planning document issued by the Ministry of Public Works and Housing, prepared as a framework for implementing the KOTAKU program.

Babakan Surabaya Subdistrict, located in Kiaracondong District, Bandung City, was enacted as part of the slum housing and settlement area in Bandung City in 2015, as stipulated in Keputusan Walikota Bandung Nomor: 648/Kep. 286-Distarcip/2015 tentang Penetapan Lokasi Lingkungan Perumahan dan Permukiman Kumuh Di Kota Bandung (Mayor Decree No. 648/Kep. 286-Distarcip/2015. on the Determination of the Location of Housing and Slum Housing Areas in Bandung), with a slum area of 37.27 hectares. In 2017, Babakan Surabaya Subdistrict was included among the 15 priority subdistricts for handling slum areas within the RP2KPKP (Rencana Pencegahan Dan Peningkatan Kualitas Permukiman Kumuh Perkotaan) Bandung City for the 2017–2021 period. Babakan Surabaya Subdistrict was classified as a moderate slum area, the largest among the 15 priority subdistricts.

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Several previous studies on slum settlement management programs, such as the KOTAKU Program, have shown that the implementation remains suboptimal or that the targets have not been achieved. An example of this can be found in research conducted by Rubianti, Wahyuningrat, and Simin (2020), which revealed that the initial conditions in Sokaraja Kidul Subdistrict showed a high percentage of slum settlement indicators, with over 50% of households not meeting the targets for non-slum settlements. Issues included the irregularity of building conditions, lack of access to clean water, poor wastewater and waste management, and inadequate fire protection. The lack of optimal community involvement and insufficient program sustainability planning may lead to similar problems in other areas if not addressed through rigorous evaluation and monitoring. Yulia, Istijono, and Hidayat (2024) stated in their research that the KOTAKU Program in Binuang Kampung Dalam Subdistrict only focused on certain slum indicators, leaving issues such as building regularity, waste management, and fire protection unaddressed. Additional obstacles, like delays in fund disbursement, further hindered the progress. This indicates that incomplete program planning and poor implementation reduce the program's effectiveness. Liandri and Suheri (2019) showed that while indicators such as road infrastructure, water supply, and drainage in Lebakgede Subdistrict, Bandung City, had achieved relatively high performance, other indicators like wastewater management, waste handling, and fire safety remained low. This demonstrates that program implementation in the field has not fully aligned with the planning documents. Furthermore, an evaluation of community perceptions revealed that indicators for wastewater management and fire protection were rated poorly, while others were considered adequate or good. This indicates a correlation between unaddressed issues and community dissatisfaction, particularly concerning wastewater management and fire protection.

This evaluation is based on previous studies that highlight the need for evaluating slum settlement management to measure program effectiveness, identify constrained indicators, and understand community perceptions that correlate with the success or failure of specific indicators in urban slum settlement management. The urgency of evaluating the KOTAKU (Kota Tanpa Kumuh) program, as outlined in the RP2KPKP Bandung City 2017-2021 document, lies in assessing the condition of Babakan Surabaya Subdistrict, which had the largest slum area (37.27 hectares in 2015) and was identified as one of the 15 priority sub-districts in the RP2KPKP Bandung City 2017-2021 for slum alleviation. This article aims to evaluate the achievement of slum settlement management in Babakan Surabaya Subdistrict, which was prioritized for intervention based on the RP2KPKP Bandung City 2017-2021 document. Additionally, it seeks to identify community opinions regarding slum settlement indicators, formulate the results of the evaluation, and propose recommendations for the RP2KPKP Bandung City program in Babakan Surabaya Subdistrict based on findings from field surveys and research conducted.

Research Methodology

This study employs a summative evaluation approach, which is used to assess whether a program is successful or not based on performance within the context of urban planning. The evaluation focuses on the effectiveness and success of outcomes, processes, and implementation based on predetermined goals and objectives (Janus and Brinkman, 2010; Li et al., 2021). The analytical approach utilized in this study is a mixed-methods approach, combining both qualitative and quantitative approaches. According to Sofaer (1999), the qualitative approach is a research method that seeks to understand social phenomena from the participants' perspective. Meanwhile, the quantitative approach is characterized by deductive reasoning, data collection through objective and standardized tools, data quantification, and results in generalization (Sudjana and Ibrahim, 2001; Arikunto, 2002; Kasiram, 2008). The data collection methods used for this evaluation include a literature review, and field observation surveys using data checklists, questionnaires, and documentation. The evaluation of the KOTAKU program begins with the collection of relevant indicators for assessing slum areas. According to the *Buku Saku - Identifikasi dan Penilaian Lokasi Kumuh* (Ministry of Public Works and Housing, 2022), the following indicators are used to assess slum locations:

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Table 1. Indicators for Assessing Slum Locations

Aspect	Indicator
Neighborhood Road Conditions	Has a minimum width of 1.5 meters
	Has drainage channels along the road
	Has an even road surface
Drainage System Conditions	Able to channel runoff water without causing puddles
	Availability of supporting drainage facilities, such as culverts and floodgates
Clean Water Supply Conditions	Access to drinking water of good quality (colorless, odorless, and tasteless)
	The community's water needs in the area reach at least 60 liters per person per day
Wastewater Management Conditions	Adequate wastewater systems, including toilets connected to individual/domestic septic tanks, communal, or centralized systems
	Availability of local or centralized wastewater treatment systems
Waste Management Conditions	Availability of garbage carts
	Waste sorting (at the neighborhood/RT level)
	Availability of temporary disposal sites (TPS)
	Availability of waste banks
	Waste collection services
	Waste transportation services
	Waste processing facilities
Fire Protection Conditions	Availability of hydrants
	Accessible roads for fire trucks
	Accessible roads, but not large enough for fire trucks
	The presence of community fire stations
	Availability of fire extinguishers (APAR)
	Availability of fire pump trucks
	Availability of ladder trucks

Source: Kementrian PUPR, 2022

Based on the indicators in Table 1, a data checklist was created for the field observation survey. Each RW (neighborhood association) in Babakan Surabaya Subdistrict which is categorized as a slum area was assessed using this checklist, with the RW head accompanying the assessment team. Subsequently, an analysis was conducted on the slum level of Babakan Surabaya Subdistrict based on the slum assessment indicators, each of which has a scoring parameter as provided in the Handbook—Identification and Assessment of Slum Areas, as shown in Table 2.

Table 2. Slum Level Threshold Value

Level of Slums	Total Score
Heavy Slum	60-80
Moderate Slum	38-59
Light Slum	16-37
Non-Slum	<16

Source: Kementrian PUPR, 2022

Additionally, a questionnaire was distributed to residents regarding the conditions of Babakan Surabaya Subdistrict based on slum area indicators. Using a Likert scale, the percentage of residents' perceptions about the environment of Babakan Surabaya Subdistrict was calculated.

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Results and Discussion

Slum Area Criteria

Data for the evaluation of the KOTAKU (Kota Tanpa Kumuh) program in Babakan Surabaya Subdistrict was obtained by using the checklist method with a focus on RW with slum status, namely RW 01, RW 03, RW 04, RW 05, RW 07, RW 10, RW 12, RW 13, RW 14, and RW 15. The use of the checklist method in this evaluation aims to identify and assess the achievement of the KOTAKU program in developing residential area infrastructure, including indicators such as neighborhood roads, drainage, clean water, wastewater, waste management, and fire safety.

1. Neighborhood Road

Table 3. Evaluation of Neighborhood Road Implementation Achievements

Neighborhood Road Criteria		
According to PUPR Standard		**Neighborhood Road Settlement**
Has a minimum width of 1.5 meters	***Has drainage channels along the road***	***Has an even road surface***
- RW 01	- RW 01	- RW 01
- RW 03	- RW 03	- RW 03
- RW 04	- RW 04	- RW 04
- RW 05	- RW 05	- RW 05
- RW 07	- RW 07	- RW 07
- RW 10	- RW 10	- RW 10
- RW 12	- RW 12	- RW 13
- RW 13	- RW 13	
- RW 14	- RW 14	
- RW 15	- RW 15	

Source: Identification Results, 2024

Table 4. Results of Achievements in Neighborhood Road Implementation

Neighborhood Road Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 01	100	90	Achieved
RW 03	100		Achieved
RW 04	100		Achieved
RW 05	100		Achieved
RW 07	100		Achieved
RW 10	100		Achieved
RW 12	67		Achieved
RW 13	100		Achieved
RW 14	67		Achieved
RW 15	67		Achieved
Neighborhood Road		**Achieved**	

Source: Analysis Results, 2024

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Source: Documentation Results, 2024

Figure 1. Neighborhood Road

Table 3 and Table 4 show that the implementation of the KOTAKU program on neighborhood road criteria in the Babakan Surabaya Subdistrict is consistent with the achievement and neighborhood road indicators. After the implementation of the KOTAKU program, all RWs met the criteria of having a road width of 1.5 meters or more; all RWs also met the criteria of having roads with roadside water channels, while only 7 RWs had neighborhood roads with flat road surfaces. The documentation of the above results can be seen in Figure 1.

2. Drainage

Table 5. Evaluation of Drainage System Implementation Achievements

Drainage System Criteria		
Drainage Infrastructure	**Drainage Facilities**	**Drainage Maintenance**
Able to channel runoff water without causing puddles	***Availability of supporting drainage facilities, such as culverts and floodgates***	
- RW 01	- RW 01	- RW 01
- RW 05	- RW 03	- RW 05
- RW 07	- RW 04	- RW 07
- RW 10	- RW 05	- RW 10
- RW 13	- RW 07	- RW 12
	- RW 10	- RW 13
		- RW 15

Source: Identification Results, 2024

Table 6. Results of Drainage System Implementation Achievements

Drainage System Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 01	100	63	Achieved
RW 03	33		Partially Achieved
RW 04	33		Partially Achieved
RW 05	100		Achieved
RW 07	100		Achieved
RW 10	100		Achieved
RW 12	33		Partially Achieved
RW 13	67		Achieved
RW 14	33		Partially Achieved
RW 15	33		Partially Achieved
Drainage System		**Achieved**	

Source: Analysis Results, 2024

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Source: Documentation Results, 2024

Figure 2. Drainage System

Table 5 and Table 6 show that the implementation of the KOTAKU program for the drainage system criteria in Babakan Surabaya Subdistrict aligns with the indicators for achieving proper drainage conditions. Drainage infrastructure capable of channeling runoff without causing puddles, which must have a curvature to direct water flow either naturally or artificially, is only present in 5 RWs. The availability of drainage facilities exists in 6 RWs. Drainage maintenance is carried out in only 7 RWs, which conduct inspection activities either regularly or periodically. Documentation results can be seen in Figure 2.

3. Clean Water Supply

Table 7. Evaluation of Clean Water Supply Implementation Achievements

Clean Water Supply Criteria	
Safe Water Access	**Fulfillment of Clean Water Needs**
Access to drinking water of good quality (colorless, odorless, and tasteless)	***The community's water needs in the area reach at least 60 liters per person per day***
- RW 01	- RW 01
- RW 03	- RW 03
- RW 04	- RW 04
- RW 05	- RW 05
- RW 07	- RW 07
- RW 10	- RW 10
- RW 12	- RW 12
- RW 13	- RW 13
- RW 14	- RW 14
- RW 15	- RW 15

Source: Identification Results, 2024

Table 8. Results of Clean Water Supply Implementation Achievements

Clean Water Supply Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 01	100		Achieved
RW 03	100		Achieved
RW 04	100		Achieved
RW 05	100	100	Achieved
RW 07	100		Achieved
RW 10	100		Achieved
RW 12	100		Achieved

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Clean Water Supply Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 13	100		Achieved
RW 14	100		Achieved
RW 15	100		Achieved
Clean Water Supply		**Achieved**	

Source: Analysis Results, 2024

Source: Documentation Results, 2024

Figure 3. Clean Water Supply

Table 7 and Table 8 show that the implementation of the KOTAKU program for clean water provision in Babakan Surabaya Subdistrict aligns with the indicators for achieving clean water provision. Access to safe water, which must meet quality standards of being tasteless, colorless, and odorless, is available in all RWs. The minimum water requirement of 60 liters per person per day is also met in all RWs, fulfilling and adequately providing clean water for each individual. Documentation results can be seen in Figure 3.

4. Wastewater Management

Table 9. Evaluation of Wastewater Management Implementation Achievements

Wastewater Management Criteria	
Wastewater Management According to Technical Standards	**Infrastructure Facilities According to Technical Requirements**
Adequate wastewater systems, including toilets connected to individual/domestic septic tanks, communal, or centralized systems	***Availability of local or centralized wastewater treatment systems***
- RW 01	- RW 01
- RW 03	- RW 03
- RW 04	- RW 04
- RW 05	- RW 05
- RW 07	- RW 07
- RW 10	- RW 10
- RW 12	- RW 12
- RW 13	- RW 13
- RW 14	- RW 14
- RW 15	- RW 15

Source: Identification Results, 2024

Table 10. Results of Wastewater Management Implementation Achievements

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Wastewater Management Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 01	100	100	Achieved
RW 03	100		Achieved
RW 04	100		Achieved
RW 05	100		Achieved
RW 07	100		Achieved
RW 10	100		Achieved
RW 12	100		Achieved
RW 13	100		Achieved
RW 14	100		Achieved
RW 15	100		Achieved
Wastewater Management		**Achieved**	

Source: Analysis Results, 2024

Source: Documentation Results, 2024

Figure 4. Wastewater Management

Table 9 and Table 10 show that the implementation of the KOTAKU program for wastewater management activities in the Babakan Surabaya Subdistrict aligns with the indicators for achieving wastewater management. All RWs have met the criteria for wastewater management. Documentation results can be seen in Figure 4.

5. Waste Management

Table 11. Evaluation of Waste Management Implementation Achievements

Waste Management Criteria						
Waste Infrastructure and Facilities Comply with Technical Requirements						
Availability of garbage carts	***Waste sorting (at the neighborhood/ RT level)***	***Availability of temporary disposal sites (TPS)***	***Availability of waste banks***	***Waste collection services***	***Waste transportation services***	***Waste processing facilities***
- RW 01	- RW 01			- RW 01	- RW 01	
- RW 03	- RW 10			- RW 03	- RW 03	
- RW 04	- RW 15			- RW 04	- RW 04	
- RW 05				- RW 05	- RW 05	
- RW 07				- RW 07	- RW 07	
- RW 10				- RW 10	- RW 10	
- RW 12				- RW 12	- RW 12	
- RW 13				- RW 13	- RW 13	
- RW 14				- RW 14	- RW 14	
- RW 15				- RW 15	- RW 15	

Source: Identification Results, 2024

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Table 12. Results of Waste Management Implementation Achievements

Waste Management Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 01	57	47	Partially Achieved
RW 03	43		Partially Achieved
RW 04	43		Partially Achieved
RW 05	43		Partially Achieved
RW 07	43		Partially Achieved
RW 10	57		Partially Achieved
RW 12	43		Partially Achieved
RW 13	43		Partially Achieved
RW 14	43		Partially Achieved
RW 15	57		Partially Achieved
Waste Management		**Partially Achieved**	

Source: Analysis Results, 2024

Source: Documentation Results, 2024

Figure 5. Waste Management

Table 11 and Table 12 show that the implementation of the KOTAKU program for waste management criteria in Babakan Surabaya Subdistrict has not yet met the indicators for achieving waste management. All RWs are served with waste collection and transportation services at least twice a week. However, only 3 RWs carry out waste sorting. Documentation results can be seen in Figure 5.

6. Fire Protection

Table 13. Evaluation of Fire Protection Implementation Achievements

Fire Protection Criteria						
Fire Protection Infrastructure and Facilities						
Availability of hydrants	***Accessible roads for fire trucks***	***Accessible roads, but not large enough for fire trucks***	***The presence of community fire stations***	***Availability of fire extinguishers (APAR)***	***Availability of fire pump trucks***	***Availability of ladder trucks***
	- RW 07 - RW 12 - RW 13 - RW 14 - RW 15	- RW 01 - RW 03 - RW 04 - RW 05 - RW 07 - RW 10 - RW 12 - RW 13 - RW 14 - RW 15		- RW 12 - RW 13 - RW 14 - RW 15		

Source: Identification Results, 2024

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Table 14. Results of Fire Protection Implementation Achievements

Fire Protection Criteria			
RW	**Percentage of Variables Met (%)**	**Average Percentage (%)**	**Explanation**
RW 01	14	27	Not Achieved
RW 03	14		Not Achieved
RW 04	14		Not Achieved
RW 05	14		Not Achieved
RW 07	29		Not Achieved
RW 10	14		Not Achieved
RW 12	43		Partially Achieved
RW 13	43		Partially Achieved
RW 14	43		Partially Achieved
RW 15	43		Partially Achieved
Fire Protection		**Not Achieved**	

Source: Analysis Results, 2024

Source: Documentation Results, 2024

Figure 6. Fire Protection

Table 13 and Table 14 show that the implementation of the KOTAKU program for fire protection activities in Babakan Surabaya Subdistrict has not yet met the indicators for achieving fire protection. All RWs have road access, but it is unsuitable for fire trucks. There are 5 RWs with adequate road access for fire trucks, but only 4 RWs have fire extinguishers (APAR) available. However, all RWs have good access to water. Documentation results can be seen in Figure 6.

Slum Level of Babakan Surabaya Subdistrict

The slum level of the Babakan Surabaya Subdistrict is determined based on the indicators for assessing slum locations, each of which has predefined scoring parameters in the *Handbook for Slum Identification and Assessment*. This calculation was carried out to evaluate the progress of the slum level from 2017, using data from the RP2KPKP Bandung City 2017–2021, to the current slum level after the implementation of the KOTAKU program in Babakan Surabaya Subdistrict. The calculation results are as follows:

Table 15. Slum Level of Babakan Surabaya Subdistrict

Calculation of Slum Level in Terms of Slum Conditions						
Subdistrict	Babakan Surabaya		**2017**	Babakan Surabaya		**2024**
Slum Category	Medium Slum			Light Slum		
Main Problem	Sanitation, Wastewater, Waste and House Buildings			House Building		
Criteria	**Physical shape**	**Parameter**	**Score**	**Physical shape**	**Parameter**	**Score**
Building Order	71% Irregular buildings	51% - 75% of the buildings on the site	**3**	71% Irregular buildings	51% - 75% of the buildings on the site	**3**

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Calculation of Slum Level in Terms of Slum Conditions						
		have no regularity.			have no regularity.	
Building Density	Low-density residential areas	25% - 50% of the buildings have a density that does not comply with the provisions.	**1**	Low-density residential areas	25% - 50% of the buildings have a density that does not comply with the provisions.	**1**
Physical Condition of the Building	64% of residential buildings have a floor area of <7.2 M2 per person.	25% - 50% of buildings on site do not meet technical requirements.	**1**	64% of residential buildings have a floor area of <7.2 M2 per person.	25% - 50% of buildings on site do not meet technical requirements.	**1**
	63% of residential buildings have roofs, walls, and floors according to technical requirements.			63% of residential buildings have roofs, walls, and floors according to technical requirements.		
Neighborhood Road	73% of residential areas are not served by an adequate road network.	51% - 75% of areas are not served by neighborhood roads.	**3**	95% of residential areas are not served by an adequate road network.	25% - 50% of areas are not served by neighborhood roads.	**1**
	55% of the road network condition in residential areas is of poor quality.	51% - 75% of the area has poor road surface quality.	**3**	5% of the road network condition in residential areas is of poor quality.	25% - 50% of the area has poor road surface quality.	**1**
Rainwater Channels (environmental drainage)	91% inundation/flooding occurs in residential areas.	76% - 100% areas where flooding occurs have water level of >30cm from >2 hours raining in >2x a year.	**5**	25% - 50% areas where flooding occurs have water level of >30cm from >2 hours raining in >2x a year.	25% - 50% areas where flooding occurs have water level of >30cm from >2 hours raining in >2x a year.	**1**
	71% of the drainage network conditions at residential locations are poor.	51% - 75% of the area has poor environmental drainage construction quality.	**3**	25% - 50% of the area has poor environmental drainage construction quality.	25% - 50% of the area has poor environmental drainage construction quality.	**1**
	70% of the area is not served by a drainage network.	51% - 75% of areas where environmental drainage is not available and/or is not connected to the hierarchy above them.	**3**	25% - 50% of areas where environmental drainage is not available and/or is not connected to the hierarchy above them.	25% - 50% of areas where environmental drainage is not available and/or is not connected to the hierarchy above them.	**1**
Waste Water Disposal	93% of residential buildings in residential locations do not have access to communal toilets/toilet facilities.	76% - 100% of the area has a wastewater system that does not meet technical standards.	**5**	100% available	25% - 50% of the area has a wastewater system that does not meet technical standards.	**1**
	92% of residential buildings in residential locations do not have gooseneck toilets connected to septic tanks.			100% centralized in one sub-district with a septic tank.		**1**

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Calculation of Slum Level in Terms of Slum Conditions						
	45% of household wastewater drainage is mixed with environmental drainage.	25% - 50% of areas have wastewater infrastructure that does not comply with technical requirements.	1	5% are mixed with environmental drainage.	25% - 50% of areas have wastewater infrastructure that does not comply with technical requirements.	1
Provision of Clean Water and Drinking Water	91% of residential buildings in residential locations are not served by a properly protected piped or non-piped clean/raw water network.	76% - 100% of the population cannot access safe drinking water.	5	91% of residential buildings in residential locations are not served by a properly protected piped or non-piped clean/raw water network.	25% - 50% of the population cannot access safe drinking water.	1
	91% of the community's minimum needs of 60 liters/person/day (for bathing, washing, and urinating) are not fulfilled.	76% - 100% of the population's minimum drinking water needs are not fulfilled.	5	100% of the community's minimum needs of 60 liters/person/day (for bathing, washing, and urinating) are not fulfilled.	25% - 50% of the population's minimum drinking water needs are not fulfilled.	1
Waste Management	100% of domestic household waste in residential areas is transported to TPS/TPA less than twice a week.	76%-100% of domestic household waste in residential areas is transported to TPS/TPA less than twice a week.	5	100% of domestic household waste in residential areas is transported to TPS/TPA less than twice a week.	25%-50% of domestic household waste in residential areas is transported to TPS/TPA less than twice a week.	1
Fire Safety Protection	Residential areas do not have the availability of fire protection infrastructure/means.	76% - 100% of the area does not have fire protection infrastructure.	5	Of the 15 RW residential areas, 9 RWs have fire protection facilities in the form of APAR. It is available in 60% of regions. Safe passage is also available.	25% - 50% of the area does not have fire protection infrastructure.	1
		76% - 100% of the area does not have fire protection facilities.	5		25% - 50% of the area does not have fire protection facilities.	1
Slum Classification		**Medium Slum**	**53**		**Light Slum**	**18**

Source: Analysis Results, 2024

Based on the analysis results in Table 15, in 2017, before the KOTAKU program was held, the classification of slums in the Babakan Surabaya Subdistrict was a medium slum. Meanwhile, after the implementation of the KOTAKU program in 2024, the classification is a light slum.

Public Perception Evaluation of the Implementation of the KOTAKU Program at Babakan Surabaya Subdistrict

This study examines public perception of the KOTAKU (Kota Tanpa Kumuh) program in Babakan Surabaya Subdistrict. This section highlights how the community evaluates its views on infrastructure, facilities, and utilities (PSU), which are basic needs in residential areas. The PSU aspects evaluated include the following indicators:

1. Condition of neighborhood roads
2. Availability and quality of clean water supply
3. The performance of the drainage system

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4. Wastewater management
5. Waste Management
6. Availability of fire protection systems

Table 16. Public Perception of Neighborhood Roads

Public Perception	Valuation Percentage					Total
	Very bad (%)	Bad (%)	Fair (%)	Good (%)	Very good (%)	
Neighborhood Road Accessibility Services	0,00	0,00	47,83	52,17	0,00	100
Neighborhood Road Surface Quality	0,00	4,35	60,87	30,43	4,35	100

Source: Analysis Results, 2024

Table 17. Public Perception of Clean Water Supply

Public Perception	Valuation Percentage					Total
	Very bad (%)	Bad (%)	Fair (%)	Good (%)	Very good (%)	
Residential Clean Water Quality	0,00	8,70	8,70	60,87	21,74	100
Adequate access to clean water per day	0,00	4,35	4,35	47,83	43,48	100

Source: Analysis Results, 2024

Table 18. Public Perception of Wastewater Management

Public Perception	Valuation Percentage					Total
	Very bad (%)	Bad (%)	Fair (%)	Good (%)	Very good (%)	
Availability of Drainage	0,00	17,39	21,74	52,17	8,70	100
Drainage Maintenance	0,00	4,35	34,78	47,83	13,04	100
Drainage Quality	0,00	21,74	34,78	34,78	8,70	100

Source: Analysis Results, 2024

Table 19. Public Perception of Clean Water Supply

Public Perception	Valuation Percentage					Total
	Very bad (%)	Bad (%)	Fair (%)	Good (%)	Very good (%)	
Wastewater Management System	0,00	13,04	26,09	43,48	17,39	100
Quality of Wastewater Management Infrastructure	0,00	17,39	21,74	39,13	21,74	100

Source: Analysis Results, 2024

Table 20. Public Perception of Waste Management

Public Perception	Valuation Percentage					Total
	Very bad (%)	Bad (%)	Fair (%)	Good (%)	Very good (%)	
Waste Processing Infrastructure Services	13,04	30,43	4,35	30,43	21,74	100
Waste Processing System	8,70	17,39	47,83	8,70	17,39	100

Source: Analysis Results, 2024

Table 21. Public Perception of Fire Protection

Public Perception	Valuation Percentage					Total
	Very bad (%)	Bad (%)	Fair (%)	Good (%)	Very good (%)	
Fire Protection Infrastructure Services	39,13	21,74	17,39	21,74	0,00	100

Source: Analysis Results, 2024

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Based on the calculation results, it can be concluded that:

1. According to Table 16, for the neighborhood road condition indicator, the level of community satisfaction is 69%, indicating that the community is satisfied.
2. According to Table 17, for the clean water supply indicator, the level of community satisfaction is 83%, indicating that the community is satisfied.
3. According to Table 18, for the drainage system indicator, the level of community satisfaction is 70%, indicating that the community is moderately satisfied.
4. According to Table 19, for the wastewater management indicator, the level of community satisfaction is 73%, indicating that the community is less satisfied.
5. According to Table 20, for the waste management indicator, the level of community satisfaction is 63%, indicating that the community is moderately satisfied.
6. According to Table 21, for the fire protection indicator, the level of community satisfaction is 44%, indicating that the community is less satisfied.

Based on previous studies, community satisfaction correlates with the success or failure of addressing indicators related to slum areas. The study in Babakan Surabaya Subdistrict also shows a correlation between indicator evaluation results and community perception of the indicators. Overall, the community shows varying levels of satisfaction with the KOTAKU program's implementation, with the highest satisfaction in clean water provision (rated as 'Achieved') and the lowest satisfaction in fire protection (rated as 'Not Achieved').

Conclusion

Based on field observations of slum areas, the results show that the aspects of roads, clean water supply, and wastewater management have achieved all criteria. The aspects of drainage and waste management are still partially achieved in terms of meeting their respective criteria. The fire protection aspect is categorized as not achieved. For aspects that are partially achieved, we generally recommend maintenance and minor improvements. For instance, some drainage systems exist but are often clogged due to trash or overgrown weeds, disrupting the water flow. Babakan Surabaya Subdistrict, located in Kiaracondong District, is classified as a densely populated area, and according to the RTRW Bandung City 2011–2031, Article 48 mentions that fire-prone areas are commonly found in densely populated settlements. Fire hazard management consists of: a) developing fire protection systems in buildings; and b) increasing the coverage of firefighting services (RP2KPKP Bandung City 2017–2021). However, analysis results show that the fire protection criteria are not achieved. We recommend providing at least one fire extinguisher (APAR) for each RW and ensuring that every household has access to adequate water supplies (water tanks, reservoirs, deep wells, or hydrants). Furthermore, based on the calculations, Babakan Surabaya Subdistrict is now classified as a light slum area, having improved from a moderate slum in 2017. Public perception of the Subdistrict's environment generally reflects moderate satisfaction with the current state of Babakan Surabaya Subdistrict.

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